

We claim:

1. An electrochemical cell, comprising:

at least one positive electrode;

at least one negative electrode; and

5 an electrolyte,

wherein said at least one positive electrode and/or said at least one negative electrode folded in a zigzag configuration.

10 2. The electrochemical cell of claim 1, wherein said at least one positive electrode comprises a nickel hydroxide material.

15 3. The electrochemical cell of claim 1, wherein said at least one negative electrode comprises a hydrogen storage alloy material.

4. The electrochemical cell of claim 1, wherein said electrolyte comprises an alkaline material.

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5. The electrochemical cell of claim 1, wherein said alkaline material comprises an aqueous solution of an alkali metal hydroxide.

6. The electrochemical cell of claim 1, wherein said at least one positive electrode and said at least one negative electrode are disposed in a prismatic case.

5 7. An electrochemical cell, comprising:

an electrode stack including a positive electrode and a negative electrode, said electrode stack folded in a zigzag configuration having folds and creases; and

an electrolyte.

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8. The electrochemical cell of claim 7, wherein said at least one positive electrode comprises a nickel hydroxide material.

15 9. The electrochemical cell of claim 7, wherein said at least one negative electrode comprises a hydrogen storage alloy.

10. The electrochemical cell of claim 7, wherein said electrolyte comprises an alkaline electrolyte.

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11. The electrochemical cell of claim 7, wherein said electrolyte comprises an aqueous solution of an alkali metal hydroxide.

12. The electrochemical cell of claim 7, further comprising electrode tabs attached to the creases of said electrode stack.

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13. An electrochemical cell, comprising:

an electrode folded in a zigzag configuration having folds and creases;

at least one counter-electrode disposed within one or
10 more of the folds of said electrode; and
an electrolyte.

14. The electrochemical cell of claim 13, wherein said
electrode is a positive electrode and said counter-
15 electrode is a negative electrode.

15. The electrochemical cell of claim 13, wherein said
electrode is a negative electrode and said counter-
electrode is a positive electrode.

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16. The electrochemical cell of claim 14, wherein said
positive electrode comprises a nickel hydroxide material.

17. The electrochemical cell of claim 14, wherein said negative electrode comprises a hydrogen storage alloy.

18. The electrochemical cell of claim 15, wherein said
5 positive electrode comprises a nickel hydroxide material.

19. The electrochemical cell of claim 15, wherein said negative electrode comprises a hydrogen storage alloy.

10 20. The electrochemical cell of claim 13, wherein said counter-electrode is a bifold electrode having a first leg and a second leg.

21. The electrochemical cell of claim 13, wherein said
15 electrode and said at least one counter-electrode are disposed in a prismatic case.

22. The electrochemical cell of claim 13, wherein said electrolyte is an alkaline electrolyte.

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23. The electrochemical cell of claim 13, wherein said electrolyte is an aqueous solution of an alkali metal hydroxide.

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a2 24. An electrochemical cell, comprising:

an electrode folded in a zigzag configuration having folds and creases; and

at least one bifold counter-electrode having a first
5 leg and a second leg, said first leg and said second leg disposed within a first and a second fold on the same side of the zigzag configuration of said electrode.

25. The electrochemical cell of claim 24, wherein said
10 electrode is a positive electrode and said counter-electrode is a negative electrode.

26. The electrochemical cell of claim 24, wherein said
15 electrode is a negative electrode and said counter-electrode is a positive electrode.

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a3 27. The electrochemical cell of claim 25, wherein said positive electrode comprises a nickel hydroxide material.

20 28. The electrochemical cell of claim 25, wherein said negative electrode comprises a hydrogen storage alloy.

29. The electrochemical cell of claim 26, wherein said positive electrode comprises a nickel hydroxide material.

30. The electrochemical cell of claim 26, wherein said negative electrode comprises a hydrogen storage alloy.

31. The electrochemical cell of claim 24, wherein said first leg and said second leg are disposed in adjacent folds on the same side of the zigzag configuration of said electrode.

32. The electrochemical cell of claim 24, wherein said at least one bifold counter-electrode is a plurality of bifold counter-electrodes, each of said bifold counter-electrodes having a first leg and a second leg.

33. The electrochemical cell of claim 32, wherein said plurality of bifold electrodes are disposed over alternating creases on each side of the zigzag configuration of said electrode.

34. An electrochemical cell, comprising:
a bifold negative electrode having a first and a second leg;
a bifold positive electrode having a first and a second leg; and

an electrolyte,
wherein the first leg of said negative electrode is
disposed between the first and second leg of said positive
electrode, and the first leg of said positive electrode is
5 disposed between the first and second leg of said negative
electrode.

35. The electrochemical cell of claim 34, wherein said
electrolyte comprises an alkaline electrolyte.

36. The electrochemical cell of claim 34, wherein said
positive electrode comprises a nickel hydroxide material.

37. The electrochemical cell of claim 34, wherein said
15 negative electrode comprises a hydrogen storage alloy.

38. An electrochemical cell, comprising:

an electrode stack including an electrode disposed
between a first and a second counter-electrode, said
20 electrode stack folded in a zigzag configuration with folds
and creases; and
an electrolyte.

39. The electrochemical cell of claim 38, wherein said electrode is a positive electrode, and said first and second counter-electrodes are each negative electrodes.

5 40. The electrochemical cell of claim 38, wherein said electrode is a negative electrode, and said first and second counter-electrodes are each positive electrodes.

10 41. The electrochemical cell of claim 39, wherein said positive electrode comprises a nickel hydroxide material.

42. The electrochemical cell of claim 39, wherein said negative electrodes comprise a hydrogen storage alloy.

15 43. The electrochemical cell of claim 40, wherein said positive electrode comprises a nickel hydroxide material.

20 44. The electrochemical cell of claim 40, wherein said negative electrode comprises a hydrogen storage alloy material.

45. The electrochemical cell of claim 38, further comprising a hydrophobic material disposed in at least one of the folds of the zigzag configuration of said electrode.

46. The electrochemical cell of claim 38, wherein said
electrode stack further comprises a first and a second
hydrophobic layer, each of said hydrophobic layers disposed
5 on an outer face of a corresponding counter-electrode, said
electrode stack folded to form said zigzag configuration.

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